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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,349	09/12/2003	William Frederick Dew JR.	1958.002	6747

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EXAMINER
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SAVAGE, MATTHEW O

ART UNIT	PAPER NUMBER
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1724

MAIL DATE	DELIVERY MODE
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06/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/661,349	<b>Applicant(s)</b> DEW, WILLIAM FREDERICK	
	<b>Examiner</b> Matthew O. Savage	<b>Art Unit</b> 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 46-52, 54-57 and 61-63 is/are pending in the application.
- 4a) Of the above claim(s) 58-60 and 63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 46-52, 54-57, 61, and 62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations recited in claim 47 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 46-52, 54, 55, 57, 61, and 62 are rejected under 35 U.S.C. 102(a) as being anticipated by "EVALUATION OF THE FUZZY FILTER FOR THE FILTRATION OF SECONDARY EFFLUENT" by Caliskaner et al.

With respect to claim 46, Caliskaner et al disclose a high rate filtration apparatus for removing suspended solids from liquids including a filter housing (see page 3-6) having an axial flow direction therethrough for liquid, a first perforated panel fixedly secured in said housing transverse to said flow direction, a second perforated panel movably secured in said housing transverse to said flow direction and spaced from said first perforated panel, an influent liquid conduit located adjacent the fixed first panel, the influent conduit connected to a source of liquid having suspended solids therein, an effluent liquid conduit located adjacent the movable second panel thereby establishing the axial flow direction through said housing from said influent conduit to said effluent conduit; f) substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers located between said first and second panels (see page 3-4, page 3-7, and FIG. 3-5); and g) a piston for moving said second perforated panel toward and away from said fixed first panel to define: i) a fixed filter bed of said media compressed between said panels during filtration, said filter bed having a porosity gradient across the bed proceeding progressively from more porous to less porous in said axial flow direction; and ii) a cleaning chamber between said panels during washing wherein said second panel is moved away from said first panel to

provide said media in an uncompressed condition for washing in said axial flow direction.

Concerning claim 47, Caliskaner et al disclose a pressure sensing apparatus for monitoring head loss (see page 3-10 and FIG. 3-8).

Regarding claim 48, Caliskaner et al disclose the effluent liquid conduit as including a filtered liquid effluent conduit and a separate wash water effluent conduit (see FIG. 3-4).

As to claim 49, Caliskaner et al disclose a distribution plenum located between the liquid influent conduit and the fixed first perforated panel capable of distributing liquid evenly through the first panel and into the filter bed (see FIG. 3-4).

Regarding claim 50, Caliskaner et al disclose the axial flow direction as being upflow, the fixed first panel being located below the movable second panel, the influent liquid conduit is located below the fixed first panel, and the effluent liquid conduit being located above the movable second panel (see FIG. 3-4).

Concerning claim 51, Caliskaner et al disclose a gas injection conduit located adjacent the first panel for supplying air to mechanically shear trapped solids from the media in the cleaning chamber (see FIG. 3-4).

As to claim 52, Caliskaner et al disclose the gas injection conduit as including two air conduits whereby air injection is alternated between said two conduits to increase the mechanical effect of shearing trapped solids from the media (see page 3-8).

Concerning claim 54, Caliskaner et al disclose the influent conduit is in flow communication with a single source of liquid for said filter bed at a flow rate of about 820 to 2050 L/m<sup>2</sup>·min (20 to 50 gal/ft<sup>2</sup>·min) at a bed compression ratio of from about 15 to 40 percent, and wherein said influent conduit is in flow communication with a single source of liquid for said cleaning chamber at a rate of from about 1 to 6 percent based on the total fluid passing through the filter (see table 4-1).

Regarding claim 55, Caliskaner et al disclose the collector size, effective pore size, and depth of said filter bed are adjustable by movement of said second panel as filtration proceeds, whereby head loss can be adjusted and filtration efficiency maintained during filtration by mechanically expanding said fixed bed (see page 5-8).

With respect to claim 57, Caliskaner et al disclose an up-flow high rate filtration apparatus for removing suspended solids from waste water, the apparatus including a) a vertically oriented filter housing having a waste water influent conduit located in a lower portion thereof and separate filtered water and wash water effluent conduits located in an upper portion thereof, said conduits establishing an upward axial flow direction through said housing (see FIG. 3-4); b) a first perforated panel fixedly secured in the housing above said influent waste water conduit and transverse to the axial flow direction; c) a second perforated panel movably secured in the housing transverse to the axial flow direction, above the first panel and spaced therefrom, and below the filtered water and wash water effluent conduits d) a distribution plenum located between the influent waste water conduit and the fixed first perforated panel, whereby waste water is evenly distributed through the first panel in the axial flow direction; e)

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substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers located between said first and second panels (see pages 3-4, 3-7, and FIG. 3-5); g) a piston for moving said second perforated panel toward and away from said fixed first panel to define: i) a fixed filter bed of media compressed between said panels at a bed compression ratio of from about 15 to 40 percent during filtration, said fixed filter bed having a porosity gradient across the bed proceeding progressively from more porous to less porous in said axial flow direction, wherein collector size, effective pore size, and depth of said filter bed are adjustable by movement of said second panel as filtration proceeds at a flow rate of about 820 to 2050 L/m<sup>2</sup>·min (20 to 50 gal/ft<sup>2</sup>·min) (see table 4-1), and whereby head loss can be adjusted and filtration efficiency maintained during filtration by mechanically expanding the fixed bed; and ii) a cleaning chamber between the panels during washing wherein the second panel is moved away from the first panel to provide the media in an uncompressed condition for washing at a rate of from about 1 to 6 percent based on the total fluid passing through the filter; and h) a pair of air conduits located below the fixed first panel on opposite sides of the housing whereby air injection is alternated between the conduits into the cleaning chamber to increase the mechanical effect of shearing trapped solids from the media.

As to claims 61 and 62, Caliskaner et al disclose the influent conduit as being connected to the cleaning chamber and supplying liquid waste water having suspended solids therein for washing (e.g., secondary effluent, see pages 3-4 to 3-7).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caliskaner et al.

Caliskaner et al fail to specify multiple cells of filter housings each having independently operable influent and effluent conduits wherein one or more cells can be defined as cleaning chambers independently of other cells defined as filter beds, however, duplicating parts to obtain a multiplied effect is considered obvious in view of St. Regis Paper Co. V. Bemis Co., Inc., 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

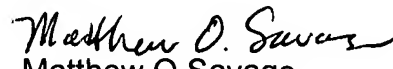
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Matthew O Savage  
Primary Examiner  
Art Unit 1724

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